

REMARKS

In the Office Action, claims 1-3 were rejected under 35 USC §102(b) as being anticipated by Bytow or Girardin. Claims 1, 2, 6-8, 10-16 and 18-20 were rejected under 35 USC §102(b) as being anticipated by Hague et al or Anderson. Claims 6-12 and 15-22 were rejected under 35 USC §102(b) as being anticipated by Silvers, Jr. Claims 4, 5, 9 and 17 were rejected under 35 USC §103(a) as being unpatentable over Hague et al or Anderson. Claims 5, 10, 13, 15, 17, 18, 20, 21 and 22 were rejected under 35 USC §112, second paragraph.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made".

The present patent application (see in particular Fig. 5a, 4, 3) differs from the patent to Silvers in particular by the fact that the gripping device according to Silvers has to grip the tool shaft axially. This cannot be done in any other way for technical reasons.

The present invention differs from Silvers by the fact that the gripping device according to the present invention grips the tool shaft from the side, preferably at a right angle. Furthermore it has to be stated that the second member 12 can be activated in the form of a claw in an axial as well as in a radial direction. These features are not in either of the citations to Silvers, Anderson or Hague et al.

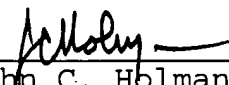
The present application differs from Hague et al concerning the gripper also by the fact that with Hague et al both members of the gripper are provided with a claw which must necessarily grip into a groove at the tool shaft. In the present invention there is only one claw. This is in particular to the case because of an overgripping by two gripper elements 10 and 19 for moving the tool. See in particular Fig. 3 of the application where this embodiment is clearly shown. An overgripping for moving the tool is neither shown in Silvers or Hague et al.

Based on the foregoing amendments and remarks, it is respectfully submitted that the claims in the present application, as they now stand, patentably distinguish over the references cited and applied by the Examiner and are, therefore, in condition for allowance. A Notice of Allowance is in order, and such favorable action and reconsideration are respectfully requested.

However, if after reviewing the above amendments and remarks, the Examiner has any questions or comments, he is cordially invited to contact the undersigned attorneys.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please amend the specification as follows:

Please replace the paragraph beginning at page 1, line 2 with the following rewritten paragraph.

--~~BACKGROUND OR FIELD OF~~ THE INVENTION--

Please insert the following paragraph on page 1, before line 8.

--~~BACKGROUND OF THE INVENTION~~--

Please replace the paragraph beginning at page 2, line 3 with the following rewritten paragraph.

--~~BRIEF SUMMARY OF THE INVENTION~~ --

Please replace the paragraph beginning at page 8, line 5 with the following rewritten paragraph.

--~~BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS~~ --

Please replace the paragraph beginning at page 8, line 19 through page 9, line 7 with the following rewritten paragraph.

--The tool magazine system according to the invention is shown diagrammatically in Fig. 1 and 2. The tools 2 are stored in

a tool magazine 3 and picked up by a gripper 1 when required. The magazine 3 may for example comprise a tool rack with a plurality of superimposed rack bases 30. The bases 30 have a vertical back 33, on which they may be fixed to a supporting wall, supporting frame or the like (not shown). The tool carrier ~~34~~ or rack base 30 projecting substantially at right angles to the back 33 has openings 31 at its front side, facing away from the back; the openings correspond to the outside diameter of the tool or tool shank 21 to be held and form the bearing means ~~31~~ for the tools. Appropriate shoulders are moulded in the ~~tool carrier 34~~ rack base 30 in the region of the openings for that purpose. --

Please replace the paragraph beginning at page 15, line 19 with the following rewritten paragraph.

--An encircling system according to the invention for engaging round an article such as the tool 2 is shown in Fig. 4 3. The system comprises two grippers 10, 19 of identical construction. However the presence of two identical grippers is not essential for the invention to be used. The two grippers 10, 19 are arranged so that they are rotated relative to an axis normal to the longitudinal axis 20 of the tool and engage the tool at different sides. --

IN THE ABSTRACT:

Please amend the Abstract of the Disclosure as follows:

-- ~~The invention relates to a~~ A tool magazine system and a gripper for a machining spindle. ~~It is propose that said~~ The gripper should be fed to ~~said~~ the tool laterally with respect to the rotational or longitudinal axis of ~~said~~ the tool, particularly substantially at right angles to that axis, and should grasp ~~said~~ the tool. --

IN THE DRAWINGS:

A Letter to the Official Draftsman is attached with proposed drawing corrections to Figure 2.

IN THE CLAIMS:

Please cancel claims 1-5, 13, 15, 16 and 17 without prejudice or disclaimer.

Please amend claims 6-12 and 14-22 as follows:

6. (Amended) A gripper for ~~grasping, conveying and/or passing on a tool particularly for~~ conveying a tool from a tool magazine to a work spindle, the tool ~~in particular~~ having a shank, wherein ~~and~~ a groove, recess, shoulder or the like with which a the shank having a larger diameter than the groove, said gripper comprising:

~~a first member of the gripper interacts is provided in~~ for interacting with said surface groove of the shank or tool, and

a second member of the gripper interacts for interacting with a different region of said shank or tool from said groove,

wherein said second member ~~of said gripper~~ lies against said ~~surface of said shank or the outside diameter~~ different region of said tool, and said second member moving axially with respect to the tool when the tool is grasped by the second member.

7. (Amended) A gripper according to claim 6, wherein said second member has at least two contact surfaces for gripping the tool, and said tool is located ~~in said gripper~~ between those the at least two contact surfaces, and held with a clamping action.

8. (Amended) A gripper according to claim 6, wherein said second member has a ~~claw-like structure and said claw engages over~~ engaging at least half of the a diameter of said ~~tool shank or~~ tool.

9. (Amended) A gripper according to claim 6, wherein said first member has at least one ~~spring-like~~ contact surface ~~which engages~~ for engaging in a ~~peripheral~~ the groove or slot in said ~~tool shank or~~ tool.

10. (Amended) A gripper according to claim 6, wherein said first member and said second member ~~can be~~ are moved relative to each other, ~~and in particular can be moved linearly or swivelled towards each other.~~

11. (Amended) A gripper according to claim 6, wherein said first member is stationary ~~relative to the gripper~~ and the second member is constructed for movement toward it ~~the first member~~.

12. (Amended) A gripper according to claim 6, wherein said second member comprises at least two elements which interact ~~in the manner of as~~ claws or tongs.

14. (Amended) ~~A gripper according to claim 6, wherein a hydraulic or pneumatic operating cylinder, an electric motor or a separate actuating means act as a drive for~~ ~~an actuating device drives~~ said ~~first and second~~ members and/or elements of said gripper.

18. (Twice Amended) A gripper according to claim 6, characterised in that ~~wherein~~ in grasping said tool ~~said contact surface of~~ said first member first engages in said ~~annular slot, groove, recess or shoulder of~~ said tool or tool shank, and said second member ~~previously, simultaneously or subsequently~~ grasps the ~~surface of said tool shank or tool~~ with a clamping action.

19. (Amended) A gripper according to claim 6, wherein ~~on letting go of said tool said second member moves away from said shank and overcomes said clamping, in that~~ said first member forms

an abutment for ~~that purpose~~ **said second member** in its **an** interaction **of said second member** with said tool ~~or tool shank~~.

20. (Amended) A gripper according to claim 6^b wherein a position-securing means for radial alignment of said tool is provided on ~~said gripper, particularly on~~ said first member.

21. (Amended) An encircling system for encircling ~~an article such as~~ a tool, the system comprising two grippers, wherein said grippers are ~~rotated~~ **moved** about an axis normal to the **a** longitudinal axis of said tool and engage said tool, ~~particularly on opposing sides of the workpiece~~.

22. (Amended) An encircling system according to claim 21, wherein ~~said~~ **a** first member ~~respectively of~~ **each of** said grippers engages in ~~said~~ **a** peripheral groove in said tool ~~or tool shank and puts respectively said~~ **a** second member on **of each of said grippers engages** a respective shank section **of the tool** adjacent said groove.